

I claim:

1. An intelligent multifunctional mailbox having an unique identification number (ID)

comprising:

a main case having at least one built-in regular compartment;

a control panel located at easy accessible top portion of the case, wherein the panel

comprising:

a programmable keypad;

at least one LED status light;

a first video camera;

a first connector providing interface for all wires and power of the compartment;

means for storing the captured video/audio data from the camera;

at least one stackable secured module compartment having

a door with magnetic door lock controlled by the programmable

keypad through assigned passwords;

means for sounding alarm while the door is opened;

an optional auxiliary camera;

an occupancy sensor coupling to the control panel;

an optional means for controlling compartment temperature coupling to the occupancy sensor;

a plurality of second connectors, which are the complementary of the first connector and connect the wires and power between the main case and the secured module compartments;
and
a power line.

2. The mailbox claimed as claim 1, wherein means for storing the captured video/audio data from the camera further comprising a plurality of connecting slots where a memory device can be plugged in to receive the video/audio data captured by the first camera.
3. The mailbox claimed as claim 1, wherein means for storing the captured video/audio data from the camera further comprising a plurality of connecting slots where a memory device can be plugged in to receive the video/audio data captured by the first camera and the optional auxiliary camera.
4. The mailbox claimed as claim 2 or 3, wherein a plurality of connecting slots where a memory device can be plugged in to receive the video/audio data captured by the first camera further comprising:
the connecting slots using USB interface protocol; and
the memory device is a compacted flash memory module.

5. The mailbox claimed as claim 4, wherein a plurality of connecting slots where a memory device can be plugged in to receive the video/audio data captured by the first camera further comprising of two USB interfaces.
6. The mailbox claimed as claim 1, wherein an optional means for controlling compartment temperature further comprising:
 - a temperature control device controlling by the occupancy sensor;
 - if the sensor detecting the presence of item inside the compartment then
 - means for turns on the temperature control device which invokes a temperature pump to work; and
 - means for bringing the compartment interior temperature to a desire temperature range and maintaining that temperature range.
7. The mailbox claimed as claim 5, the temperature pump is a built-in miniature NP junction thermoelectric unit.
8. The mailbox claimed as claim 5, wherein an optional means for controlling compartment temperature further comprising:
 - a switch offering a plurality of selections to select from a plurality temperature ranges;
 - a temperature control device controlling by the occupancy sensor, wherein only if the sensor detecting the presence of item inside the compartment, then sensor turns on the temperature device which invokes a temperature pump to work; and

means for bringing the compartment interior temperature to a desire temperature range and maintaining temperature within that temperature range.

9. The mailbox claimed as claim 7, wherein a switch offering a plurality of selections to select from a plurality temperature ranges further comprising two selections where one selection is for a hot temperature range and another is for a cold temperature range.
10. The mailbox claimed as claim 7, wherein a switch offering a plurality of selections to select from a plurality temperature ranges further comprising three selections where one selection is for a hot temperature range and one is for a cold temperature range and one is to turn the temperature pump off.
11. The mailbox claimed as claim 1, wherein the programmable keypad further comprising:
 - means for assigning a new password through the keypad for each
 - corresponding secured module compartments;
 - means for opening the lock of the corresponding secured module compartment
 - when a user keying in the correct password;
 - and
 - means for starting the recording by the first camera.
12. The mailbox claimed as claim 11, wherein the programmable keypad further comprising:
 - means for reading a identification card; and
 - means for verifying the identification card and the key-in password to unlock the
 - door of the corresponding secured module compartment.

13. The mailbox claimed as claim 11, the means for starting recording and means for storing the captured video/audio data further comprising:

means for capturing the video/audio data by the first camera; and

means for storing the capturing data simultaneously in both of plugged-in memory module.

14. The mailbox claimed as claim 11; where the means for starting the recording by the camera further comprising:

means for capturing video/audio data by the first camera; and

means for capturing video data by the optional auxiliary second camera inside of monitored compartment.

15. The mailbox claimed as claim 8, wherein the means for capturing video/audio data further comprising:

means for embedding date, such as year, month, day, hour, minute, second information within the captured video/audio data; and

means for embedding the iBOX's ID within the captured video/audio data.

16. The mailbox claimed as claim 1, wherein the occupancy sensor coupling to the control panel further comprising:

if the sensor detecting item inside the compartment, means for turning the corresponding LED status light on; and

if the sensor detecting no item inside the compartment, means for turning the corresponding LED status light off.

17. The mailbox claimed as claim 1, where the means for sounding alarm while the door is opened further comprising:

an alarm installed inside the compartment coupling with the compartment door locking mechanism;
means for sounding the alarm if the door is opened; and
means for turning off the alarm if the door is locked.

18. The mailbox claimed as claim 1, where the means for alarming while the door is opened further comprising:

one alarm installed with the mailbox;
the alarm is shared and coupling with the locking mechanism of all installed secured module compartments.
means for sounding the alarm if any one door of these secured module compartments is opened; and
means for turning off the alarm if the door is locked.

19. An intelligent multifunctional mailbox comprising:

a case having at least one built-in regular compartment with one door;
means for communicating with a remote device;
a main case having at least one built-in regular compartment;

a control panel located at easy accessible top portion of the case, wherein the panel comprising:

- a programmable keypad whose password can be assigned locally or remotely;

- at least one LED status light;

- a first video camera;

- a first connector providing interface for all wires and power of the compartment;

- means for storing the captured video/audio data from the camera;

at least one stackable secured module compartment having

- a door with magnetic door lock controlled by the programmable keypad;

- means for sounding alarm while the door is opened;

- an optional auxiliary camera;

- an occupancy sensor coupling to the control panel;

- an optional means for controlling compartment temperature coupling to the occupancy sensor;

a plurality of second connectors, which are the complementary of the first connector and connect the wires and power between the main case and the secured module compartments;

and

a power line.

20. The mailbox claimed as claim 19, wherein the means for communicating with a remote device further comprising means for transmitting and receiving data and control signals with a remote device through powerline.
21. The mailbox claimed as claim 19, wherein the means for transmitting and receiving data and control signals with a remote device through powerline further comprising:
- means for transmitting the video/audio data captured by the first camera to the remote device; and
 - means for receiving control signals regarding to password assignment from the remote device.
22. the mailbox claimed as claim 21, wherein the means for receiving password from the remote device further comprising:
- means for receiving password assignment for a specified compartment from the remote device; and
 - means for storing the received password.
23. the mailbox claimed as claim 22, wherein the means for receiving password assignment for a specified compartment from the remote device further means for receiving password assignment from a wireless phone.

24. the mailbox claimed as claim 23, wherein the means for receiving password assignment for a specified compartment from the remote device further means for receiving password assignment from a remote computer.
25. The mailbox claimed as claim 19, wherein the means for receiving control signals regarding to password assignment from the remote device further means receiving control signals through the powerline transmission.
26. The mailbox claimed as claim 20, wherein the means for receiving control signals regarding to password assignment from the remote device further means receiving control signals through a wireless transmission.
27. The mailbox claimed as claim 20, wherein the means for storing the video/audio data captured by the first video camera further comprising:
- means for storing the captured video/audio data locally; and
 - means for storing the captured video/audio data at the remote device.
28. The mailbox claimed as claim 27, wherein means for storing the captured video/audio data further comprising at least one connecting slot where a memory device can be plugged in to receive the captured video/audio data from the camera.
29. The mailbox claimed as claim 28, wherein at least one connecting slot where a memory device can be plugged in to receive the captured video/audio data from the camera further comprising:

the connecting slot using USB interface protocol; and
the memory device is a compacted flash memory module.

30. The mailbox claimed as claim 28, wherein means for storing the captured video/audio data from the camera further comprising a plurality of connecting slots where a memory device can be plugged in to receive the video/audio data captured by the first camera.

31. The mailbox claimed as claim 28, wherein means for storing the captured video/audio data from the camera further comprising a plurality of connecting slots where a memory device can be plugged in to receive the video/audio data captured by the first camera and the optional auxiliary camera.

32. The mailbox claimed as claim 19, wherein an optional means for controlling compartment temperature further comprising:

a temperature control device controlling by the occupancy sensor;

if the sensor detecting the presence of item inside the compartment then

means for turns on the temperature control device which invokes a temperature pump to work; and.

means for bringing the compartment interior temperature to a desire temperature range and maintaining that temperature range.

33. The mailbox claimed as claim 19, the temperature pump is a built-in miniature NP junction thermoelectric unit.

34. The mailbox claimed as claim 19, wherein an optional means for controlling compartment temperature further comprising:
- a switch offering a plurality of selections to select from a plurality temperature ranges;
 - a temperature control device controlling by the occupancy sensor, wherein only if the sensor detecting the presence of item inside the compartment, then sensor turns on the temperature device which invokes a temperature pump to work; and
 - means for bringing the compartment interior temperature to a desire temperature range and maintaining temperature within that temperature range.
35. The mailbox claimed as claim 34, wherein a switch offering a plurality of selections to select from a plurality temperature ranges further comprising two selections where one selection is for a hot temperature range and another is for a cold temperature range.
36. The mailbox claimed as claim 35, wherein a switch offering a plurality of selections to select from a plurality temperature ranges further comprising three selections where one selection is for a hot temperature range and one is for a cold temperature range and one is to turn the temperature pump off.
37. The mailbox claimed as claim 19, wherein the programmable keypad further comprising:
- means for assigning a new password through the keypad for each
 - corresponding secured module compartments;

means for opening the lock of the corresponding secured module compartment
when a user keying in the correct password;
means for opening the lens shelter door; and
means for starting the recording by the first video camera.

38. The mailbox claimed as claim 37; where the means for starting the recording by the first video camera further comprising:

means for capturing the video/audio data from the first camera; and
means for capturing the video data from the optional auxiliary second camera.

39. The mailbox claimed as claim 38, wherein the means for capturing video/audio data further comprising:

means for embedding date, such as year, month, day, hour, minute, second
information within the captured video/audio data; and
means for embedding the iBOX's ID within the captured video/audio data.

40. The mailbox claimed as claim 19, wherein the occupancy sensor coupling to the control panel further comprising:

if the sensor detecting item inside the compartment, means for turning the
corresponding LED status light on; and
if the sensor detecting no item inside the compartment, means for turning
the corresponding LED status light off.

41. The mailbox claimed as claim 19, where the means for sounding alarm while the door is opened further comprising:

an alarm installed inside the compartment coupling with the compartment door locking mechanism;
means for sounding the alarm if the door is opened; and
means for turning off the alarm if the door is locked.

42. The mailbox claimed as claim 19, where the means for alarming while the door is opened further comprising:

one alarm installed with the mailbox;
the alarm is shared and coupling with the locking mechanism of all installed secured module compartments.
means for sounding the alarm if any one door of these secured module compartments is opened; and
means for turning off the alarm if the door is locked.

43. The mailbox claimed as claim 19, wherein the means for communicating with a remote device further comprising means for transmitting and receiving data and control signal to/from a remote device through wire and wireless communication.

44. The mailbox claimed as claim 43, the means for transmitting and receiving data and control signal to/from a remote device through wire and wireless communication further comprising:

means for transmitting the video/audio data captured by the first camera to the remote device; and

means for receiving control signals from the remote device.

45. The mailbox claimed as claim 43, the means for transmitting and receiving data and control signal with a remote device through wire and wireless communication further comprising:

means for transmitting the video/audio data captured by the first camera and by the auxiliary camera to the remote device; and

means for receiving control signals from the remote device.

46. the mailbox claimed as claim 45, the means for receiving password from the remote device further comprising:

means for receiving password assignment for a specified compartment from the remote device; and

means for storing the received password.

47. The mailbox claimed as claim 46, wherein the means for storing the video/audio data captured by the first video camera further comprising:

means for storing the captured video/audio data locally; and

means for storing the captured video/audio data at the remote device.

48. The mailbox claimed as claim 47, wherein means for storing the captured video/audio data further comprising at least one connecting slot where a memory device can be plugged in to receive the captured video/audio data from the camera.
49. The mailbox claimed as claim 48, wherein at least one connecting slot where a memory device can be plugged in to receive the captured video/audio data from the camera further comprising:
- the connecting slot using USB interface protocol; and
 - the memory device is a compacted flash memory module.
50. The mailbox claimed as claim 48, wherein means for storing the captured video/audio data from the camera further comprising a plurality of connecting slots where a memory device can be plugged in to receive the video/audio data captured by the first camera.
51. The mailbox claimed as claim 48, wherein means for storing the captured video/audio data from the camera further comprising a plurality of connecting slots where a memory device can be plugged in to receive the video/audio data captured by the first camera and the optional auxiliary camera.
52. The mailbox claimed as claim 43, wherein an optional means for controlling compartment temperature further comprising:
- a temperature control device controlling by the occupancy sensor;
 - if the sensor detecting the presence of item inside the compartment then

means for turns on the temperature control device which invokes a temperature pump to work; and.

means for bringing the compartment interior temperature to a desire temperature range and maintaining that temperature range.

53. The mailbox claimed as claim 43, wherein the temperature pump is a built-in miniature NP thermoelectric unit.

54. The mailbox claimed as claim 43, wherein an optional means for controlling compartment temperature further comprising:

a switch offering a plurality of selections to select from a plurality temperature ranges;

a temperature control device controlling by the occupancy sensor, wherein only if the sensor detecting the presence of item inside the compartment, then sensor turns on the temperature device which invokes a temperature pump to work; and means for bringing the compartment interior temperature to a desire temperature range and maintaining temperature within that temperature range.

55. The mailbox claimed as claim 54, wherein a switch offering a plurality of selections to select from a plurality temperature ranges further comprising two selections where one selection is for a hot temperature range and another is for a cold temperature range.

56. The mailbox claimed as claim 55, wherein a switch offering a plurality of selections to select from a plurality temperature ranges further comprising three selections where one selection is for a hot temperature range and one is for a cold temperature range and one is to turn the temperature pump off.
57. The mailbox claimed as claim 43, wherein the programmable keypad further comprising:
- means for assigning a new password through the keypad for each corresponding secured module compartments;
 - means for opening the lock of the corresponding secured module compartment when a user keying in the correct password;
 - means for opening the lens shelter door; and
 - means for starting the recording by the first video camera.
58. The mailbox claimed as claim 57; where the means for starting the recording by the first video camera further comprising:
- means for capturing the video/audio data from the first camera; and
 - means for capturing the video data from the optional auxiliary second camera.
59. The mailbox claimed as claim 58, wherein the means for capturing video/audio data further comprising:
- means for embedding date, such as year, month, day, hour, minute, second information within the captured video/audio data; and
 - means for embedding the iBOX's ID within the captured video/audio data.

60. The mailbox claimed as claim 43, wherein the occupancy sensor coupling to the control panel further comprising:
- if the sensor detecting item inside the compartment, means for turning the corresponding LED status light on; and
 - if the sensor detecting no item inside the compartment, means for turning the corresponding LED status light off.
61. The mailbox claimed as claim 43, where the means for sounding alarm while the door is opened further comprising:
- an alarm installed inside the compartment coupling with the compartment door locking mechanism;
 - means for sounding the alarm if the door is opened; and
 - means for turning off the alarm if the door is locked.
62. A method to automate home delivery using an intelligent multifunctional mailbox having an unique identification number (ID) comprising the steps of:
- using a mailbox having at least one video camera and password protected door for at least one installed compartment;
 - capturing the video/audio data of a package delivery processes that invoked one of the triggering events; and
 - storing the captured video/audio data in retrievable and verifiable form.

63. The method claimed as claim 62, wherein storing the captured video/audio data in retrievable and verifiable form further comprising the steps of:

storing the captured video/audio data into two pluggable and removable memory modules; and
the carrier and the mailbox user each keeping one memory module where video/audio data can be retrieved for later usage.

64. The method claimed as claim 62, wherein storing the captured video/audio data in retrievable and verifiable form further comprising the steps of:

storing the captured and dated video/audio data at a remotely connected computer; and
retrieving the dated video/audio data.